

# INSTRUCTIONS

# JVC<sup>®</sup>

# SA-T411U

## TIME BASE CORRECTOR



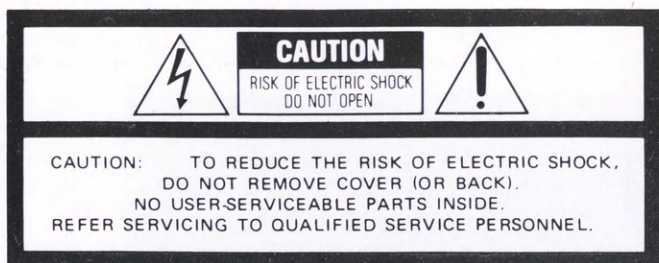
**For Customer Use:**

Enter below the Serial No. which is located on the bottom of the cabinet. Retain this information for future reference.

Model No. **SA-T411U**

Serial No. \_\_\_\_\_





The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.



Le symbole de l'éclair à l'intérieur d'un triangle équilatéral est destiné à alerter l'utilisateur sur la présence d'une "tension dangereuse" non isolée dans le boîtier du produit. Cette tension est suffisante pour provoquer l'électrocution de personnes.



Le point d'exclamation à l'intérieur d'un triangle équilatéral est destiné à alerter l'utilisateur sur la présence d'opérations d'entretien importantes au sujet desquelles des renseignements se trouvent dans le manuel d'instructions.

\*Ces symboles ne sont utilisés qu'aux Etats-Unis.

**WARNING:**  
TO PREVENT FIRE OR SHOCK  
HAZARD, DO NOT EXPOSE THIS  
UNIT TO RAIN OR MOISTURE.

This unit should be used with 120 V AC, 60 Hz or 50 Hz only.

**CAUTION:**  
To prevent electric shocks and fire hazards, do NOT use any other power source.

**AVERTISSEMENT:**  
POUR EVITER LES RISQUES  
D'INCENDIE OU D'ELECTROCUTION,  
NE PAS EXPOSER L'APPAREIL A  
L'HUMIDITE OU A LA PLUIE.

Ce magnétoscope ne doit être utilisé que sur du courant alternatif en 120 V, 60 Hz ou 50 Hz.

**ATTENTION:**  
Afin d'éviter tout risque d'incendie ou d'électrocution, ne pas utiliser d'autres sources d'alimentation électrique.

**NOTE:**  
The rating plate (serial number plate) is on the bottom of the unit.

**REMARQUE:**  
La plaque d'identification (numéro de série) se trouve sur le panneau inférieur de l'appareil.

This product complies with D.O.C. Limits (C.R.C., c. 1374) pertaining to class B digital apparatus.

Ce produit est conforme aux normes du M.D.C. (C.R.C., ch. 1374) s'appliquant aux appareils numériques de classe B.

## INFORMATION

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna
- Relocate this equipment with respect to the receiver
- Move this equipment away from the receiver
- Plug this equipment into a different outlet so that this equipment and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful:

"How to Identify and Resolve Radio-TV Interference Problems". This booklet is available from the US Government Printing Office, Washington, D.C., 20402, Stock No. 004-000-00345-4.



# CONTENTS

Precautions .....	2	Connections .....	6
Features .....	2	Specifications .....	9
Controls and Connectors			
Front panel .....	3		
Inside front panel .....	3		
Rear panel .....	5		

## PRECAUTIONS

### Safety Precautions

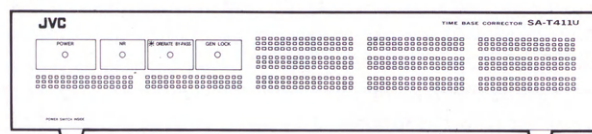
- Use only the power source specified.
- Pay attention not to damage the power cord to prevent fire or shock hazards.
- Pay attention not to allow foreign objects including water, metal and inflammable objects to enter the unit through the ventilation holes, etc. to prevent malfunctions.
- Disconnect the power plug when the unit is not to be used for a long period of time.
- When there is an abnormality, for example a strange odor or smoke, immediately disconnect the power cord and consult your dealer or JVC-authorized service agent.

### Handling and Storage

- Avoid using the unit under the following conditions:
  - in extremely hot or cold places,
  - in extremely humid places,
  - near appliances generating strong magnetic fields,
  - in dusty places,
  - in places subject to vibrations, and
  - when it has been moved between places with a large temperature difference.
- Handle the unit carefully.
  - Do not block the ventilation openings on the top and rear panels or place anything heavy on the unit.
  - Avoid applying violent shocks to the unit during transportation.

### Maintenance and Cleaning

- The unit is precision-built for a high performance, and requires periodical maintenance and cleaning for an extended service life. However, as parts replacement and/or adjustment require very sophisticated techniques and equipment, consult your nearest JVC-authorized service agent.



Note: Pull the front panel towards you to open it.

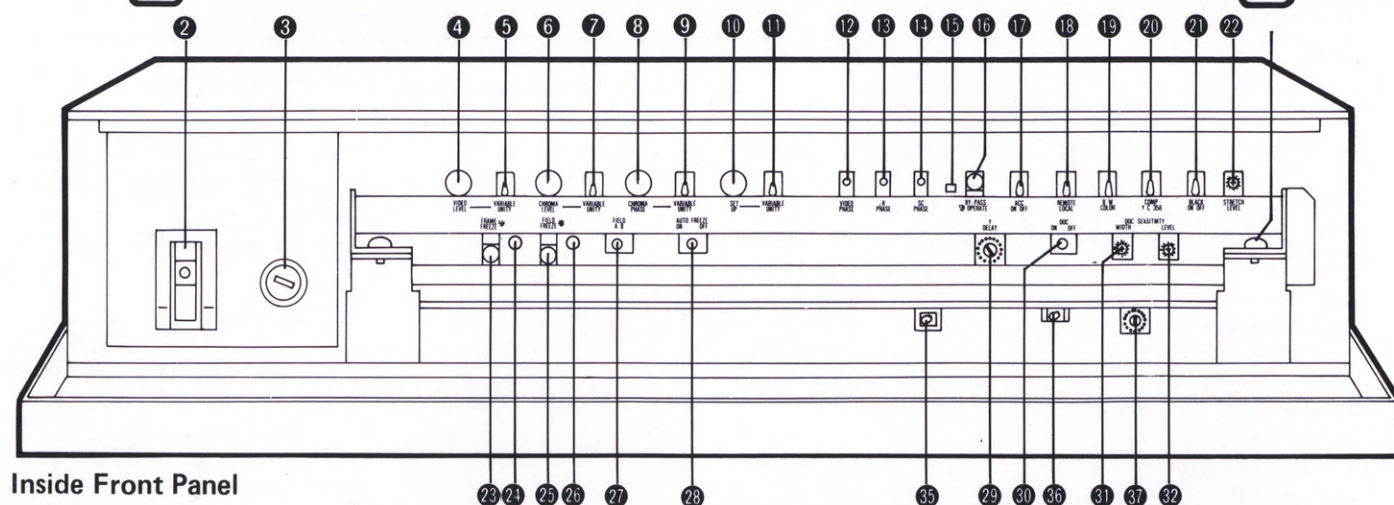
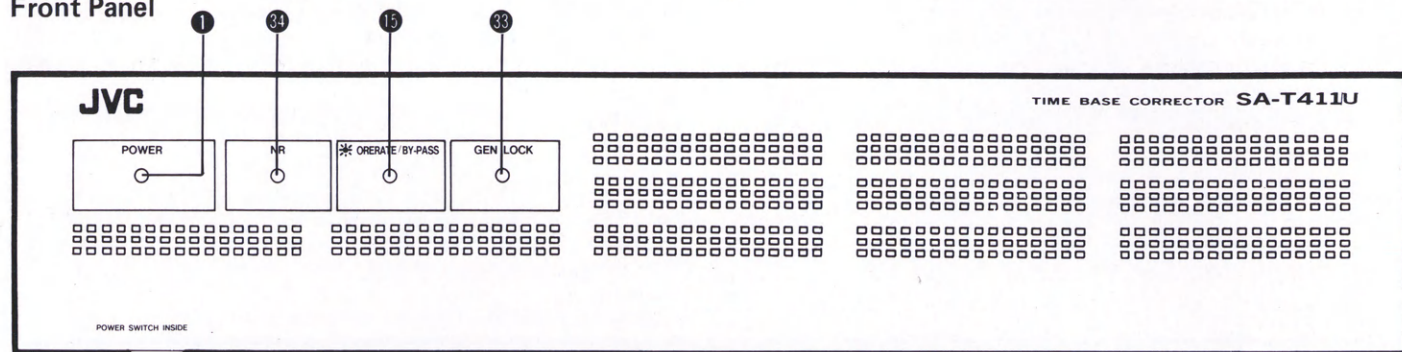
## FEATURES

- High picture quality thanks to the component signal processing system with a sampling rate of 4:1:1 and an 8-bit quantization for each of the Y and C signals. High resolution through use of a wide-band CCD comb filter.
- Simple and dependable connections at input and output of the Y/C separate signals with 7-pin connectors conforming to the YC 358 system.
- Built-in frame memory allowing a wide range of compensation over two fields.
- DOC provided as standard for production of high-quality video images.
- Y signal digital delay line allows the Y/C delay to be adjusted in 16 steps of 74 ns.
- Built-in ACC (Automatic Chroma Level Control) with on/off switch.
- Built-in black stretch circuit with on/off switch.
- Both frame freeze and field freeze (with field selection) are possible either manually or automatically.
- Optional remote control unit.
- Built-in Y and C noise reduction for improved multi-generation dubbing.



# CONTROLS AND CONNECTORS

Front Panel



Inside Front Panel

**1 POWER indicator**

**2 POWER switch**

**3 FUSE holder**

**4 VIDEO LEVEL control**

When the VIDEO LEVEL VARIABLE/UNITY select switch **5** is set to "VARIABLE", the video level of the output signal can be adjusted within  $\pm 3$  dB. The video level of the input and output signals is equal when the white marker of this control is positioned at the upper center.

**5 VIDEO LEVEL VARIABLE/UNITY select switch**

**VARIABLE:** Enables adjustment using the VIDEO LEVEL control **4**.

**UNITY:** The video level of the output signal is equal to the input signal regardless of the position of the VIDEO LEVEL control **4**.

**6 CHROMA LEVEL control**

When the CHROMA LEVEL VARIABLE/UNITY select switch **7** is set to "VARIABLE", the chroma level of the output signal can be adjusted within  $\pm 3$  dB. The chroma level of the input and output signals is equal when the white marker of this control is positioned at the upper center.

**7 CHROMA LEVEL VARIABLE/UNITY select switch**

**VARIABLE:** Enables adjustment using the CHROMA LEVEL control **6**.

**UNITY:** The chroma level of the output signal is equal to the input signal regardless of the position of the CHROMA LEVEL control **6**.

**8 CHROMA PHASE control**

When the CHROMA PHASE VARIABLE/UNITY select switch **9** is set to "VARIABLE", the chroma phase of the output signal can be adjusted within  $\pm 30^\circ$  with reference to the UNITY level.

**9 CHROMA PHASE VARIABLE/UNITY select switch**

**VARIABLE:** Enables adjustment using the CHROMA PHASE control **8**.

**UNITY:** The chroma phase of the output signal is equal to the input signal regardless of the position of the CHROMA PHASE control **8**.

**10 SET UP control**

When the SET UP VARIABLE/UNITY select switch **11** is set to "VARIABLE", the setup level of the output signal can be adjusted within  $\pm 15$  IRE. The setup level of the input and output signals is equal when the white marker of this control is positioned at the upper center.

**11 SET UP VARIABLE/UNITY select switch**

**VARIABLE:** Enables adjustment using the SET UP control **10**.

**UNITY:** The setup level of the output signal is equal to the input signal regardless of the position of the SET UP control **10**.

**12 VIDEO PHASE control**

The phase of the video signal output from the SA-T411U can be varied continuously over a range of  $\pm 2 \mu\text{sec}$ . Designed as a multi-rotation type, this control makes a maximum of 15 rotations.



**13 H PHASE control**

The horizontal phase of the video signal output from the SA-T411U can be varied continuously over a range of  $\pm 3 \mu\text{sec}$  from that of the reference input signal. Designed as a multi-rotation type, this control makes a maximum of 15 rotations. When the input is switched from Y/C 358 to COMPOSITE or vice versa, the horizontal phase must be re-adjusted.

**14 SC PHASE control**

The subcarrier phase of the video signal output from the SA-T411U can be varied continuously over a range of  $\pm 180^\circ$  from that of the reference input signal (in the Genlock mode). Designed as a multi-rotation type, this control makes a maximum of 15 rotations.

**15 OPERATE indicator**

This indicator will light when the BY-PASS/OPERATE switch 16 is set to "OPERATE". In the BY-PASS mode, the indicator is off.

**16 BY-PASS/OPERATE switch**

Press to engage the OPERATE mode. In the OPERATE mode, the time-base corrected video signal will be output.

**17 ACC ON/OFF switch**

Set to ON to activate the built-in ACC (Automatic Chroma Level Control); the chroma level of the video signal output from the SA-T411U will be automatically adjusted with reference to the burst signal of the input video signal. Then the chroma level can be adjusted with the CHROMA LEVEL control 6 and the luminance level can be adjusted with the VIDEO LEVEL control 4, without varying the reference chroma level.

**18 REMOTE/LOCAL select switch**

LOCAL: For operation from the controls of this unit.

REMOTE: For remote-control operation from the remote control unit connected to the REMOTE connector 11 on the rear panel.

**19 B-W/COLOR mode select switch**

B/W: The input signal is processed as a black-and-white signal (without chroma and burst signals) regardless of whether it is black-and-white or color.

COLOR: The input signal is processed as a color signal regardless of whether it is black-and-white or color. The burst signal is added to the output signal even when the input signal is monochrome.

**20 COMPOSITE/Y/C 358 input select switch**

Selects the video input signal applied to the VIDEO INPUT COMPOSITE or Y/C 358 connector.

**21 BLACK STRETCH ON/OFF switch**

ON: Enables adjustment using the BLACK STRETCH level control 22.

OFF: The black level of the input and output signals is equal.

**22 BLACK STRETCH level control**

When the BLACK STRETCH ON/OFF switch is set to ON, the black level of the luminance signal can be adjusted with reference to the input signal. Turning it clockwise increases the black stretch level.

**23 FRAME FREEZE button**

Press for frame freeze operation. Pressing again will release the frame freeze.

**24 FRAME FREEZE indicator**

Lights in the Frame Freeze mode.

**25 FIELD FREEZE button**

Press for field freeze operation. Pressing again will release the field freeze.

**26 FIELD FREEZE indicator**

Lights in the Field Freeze mode.

**27 FIELD A/B select switch**

Selects one of the two field signals in the frame memory which is to be output.

**28 AUTO FREEZE ON/OFF switch**

In the ON position, the output video signal freezes automatically when the input video signal is interrupted.

**29 Y/C DELAY control**

Controls the delay of the Y signal in 16 steps; each step corresponds to 74 ns.

**30 DOC ON/OFF switch**

ON: To use the SA-T411U's DOC.

OFF: To use the VCR's DOC.

**31 DOC WIDTH control**

With the DOC ON/OFF switch 30 set to ON, this control allows adjustment of the reference width of dropouts that can be detected.

**32 DOC SENSITIVITY LEVEL control**

The DOC sensor level can be adjusted when the DOC switch is set to ON. Turning this control clockwise increases the sensitivity.

**33 GENLOCK indicator**

Lights when the SA-T411U is genlocked to the reference signal.

**34 NR indicator**

Lights when the NR ON/OFF switch 36 is set to ON.

**35 Y (luminance signal) NR switch**

0: OFF

1: Set to this position to activate the noise reduction for high frequency components of the luminance signal.

2: Set to this position to activate the noise reduction for both high and low frequency components of the luminance signal.

**36 NR ON/OFF switch**

ON: Enables both luminance (Y) and chroma (C) signal noise reduction switches 35 and 37.

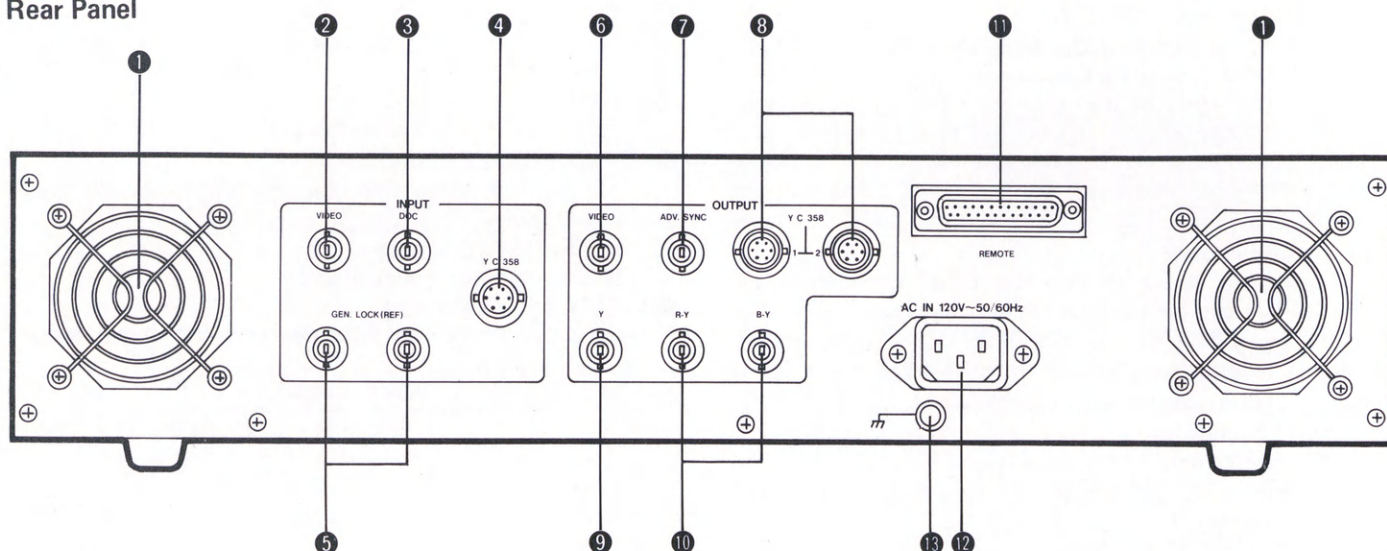
OFF: NO NR operation.

**37 C (chroma signal) NR switch**

This control is a 16-step switch with which the width of the chroma signal noise reduction limiter can be varied in 15 steps. When the switch is set to the 0 position, there is no chroma noise reduction.



## Rear Panel



### 1 Fans

### 2 VIDEO INPUT connector

Connect to the video output terminal of a VCR.

### 3 DOC INPUT connector

Apply the video playback RF signal for detecting dropouts in the VCR's output.

### 4 Y/C 358 INPUT connector

Receives Y/C 358 video signals (luminance and 3.58 MHz chroma) from an S-VHS recorder via a Y/C cable (optional).

### 5 GENLOCK REFERENCE INPUT connectors

Apply a genlock reference signal (VBS 1 Vp-p, or black burst without APL). One of these two connectors can be used as a loop-through output. When loop-through output is not used, terminate it with 75  $\Omega$ .

### 6 VIDEO OUTPUT connector

The composite video signal is output via this connector. When the BY-PASS/OPERATE select switch 16 on the front panel is set to "BY-PASS" or the power is off, the signal input to the VIDEO INPUT connector 2 is output as it is from this connector. When the BY-PASS/OPERATE switch 16 is in the "OPERATE" position, the video signal selected with the COMPOSITE/YC 358 switch 20 — either the composite signal applied to the VIDEO INPUT connector 2 or the Y/C 358 signal applied to the Y/C 358 INPUT connector 4 — is output in the form of a time-base corrected composite signal from this connector.

### 7 ADVANCED SYNC OUTPUT connector

A VCR which uses a capstan servo lock mechanism can be operated using this signal. For this purpose, connect the sync input terminal of the VCR to this connector.

### 8 Y/C 358 OUTPUT connectors (1 and 2)

The Y/C 358 signal (luminance and 3.58 MHz chroma) is output via this connector. When the BY-PASS/OPERATE select switch 16 on the front panel is set to "BY-PASS" or the power is off, the signal input to the Y/C 358 INPUT connector 4 is output as it is from the Y/C 358 OUTPUT-1 connector. When switch 16 is in the "OPERATE" position, the video signal selected with the COMPOSITE/YC 358 switch 20 — either the composite signal applied to the VIDEO INPUT connector 2 or the Y/C 358 signal applied to the Y/C 358 INPUT connector 4 — is output in the form of a time-base corrected Y/C 358 signal from this connector.

### 9 Y OUTPUT connector

The time-base corrected Y (luminance) signal is output when the BY-PASS/OPERATE switch 16 is set to "OPERATE". No signal is output when switch 16 is in the "BY-PASS" position.

### 10 R-Y/B-Y OUTPUT connectors

The time-base corrected R-Y and B-Y signals are output when the BY-PASS/OPERATE switch 16 is set to "OPERATE". No signal is output when switch 16 is in the "BY-PASS" position.

### 11 REMOTE connector

Remote control is possible by connecting an optional remote control unit and setting the REMOTE/LOCAL switch 18 to "REMOTE".

The following items can be remote-controlled:

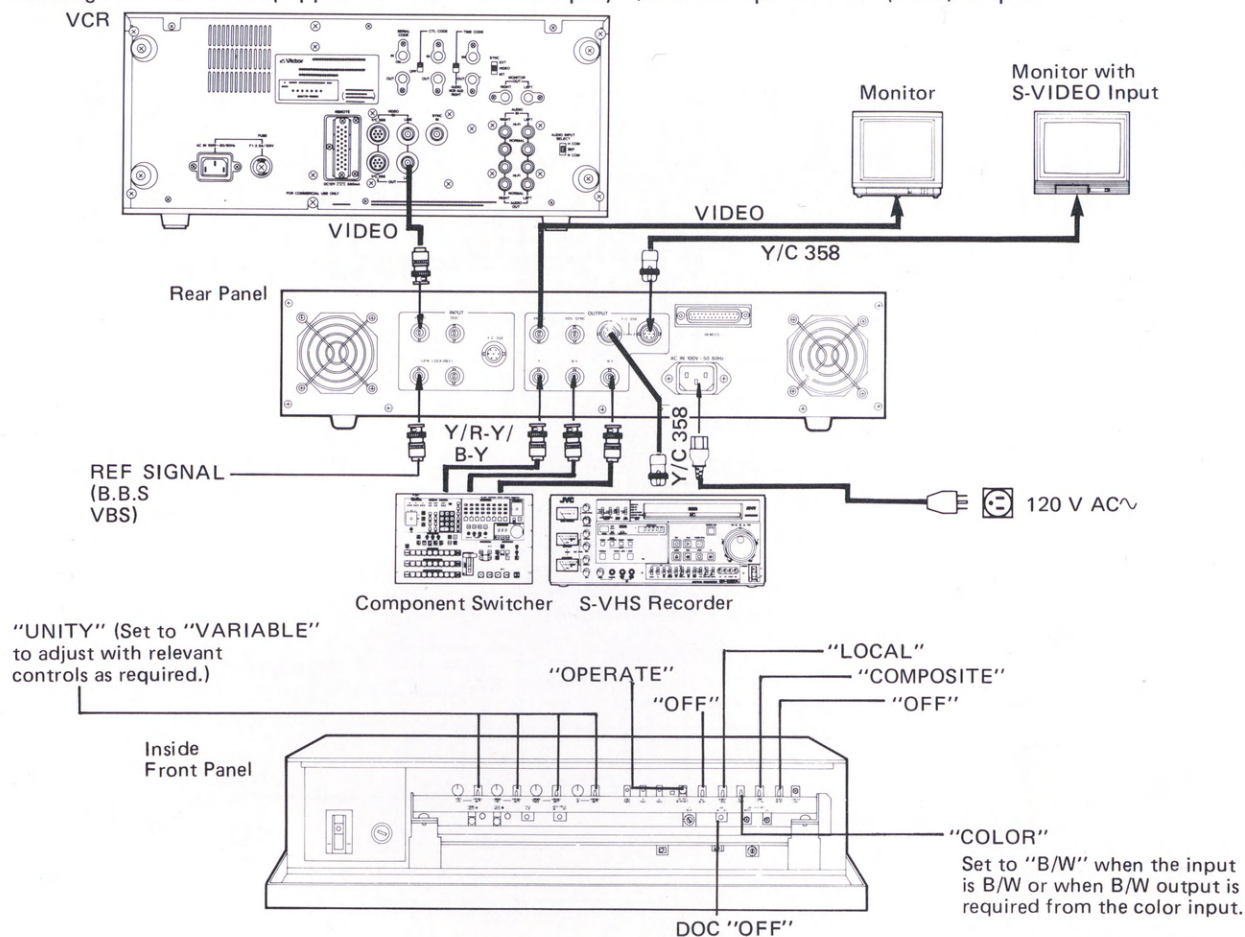
VIDEO LEVEL, CHROMA LEVEL, CHROMA PHASE, SET UP, BY-PASS/OPERATE, FREEZE ON/OFF, FRAME FREEZE, FIELD FREEZE (with field selection), STROBE ON/OFF.

### 12 AC input connector

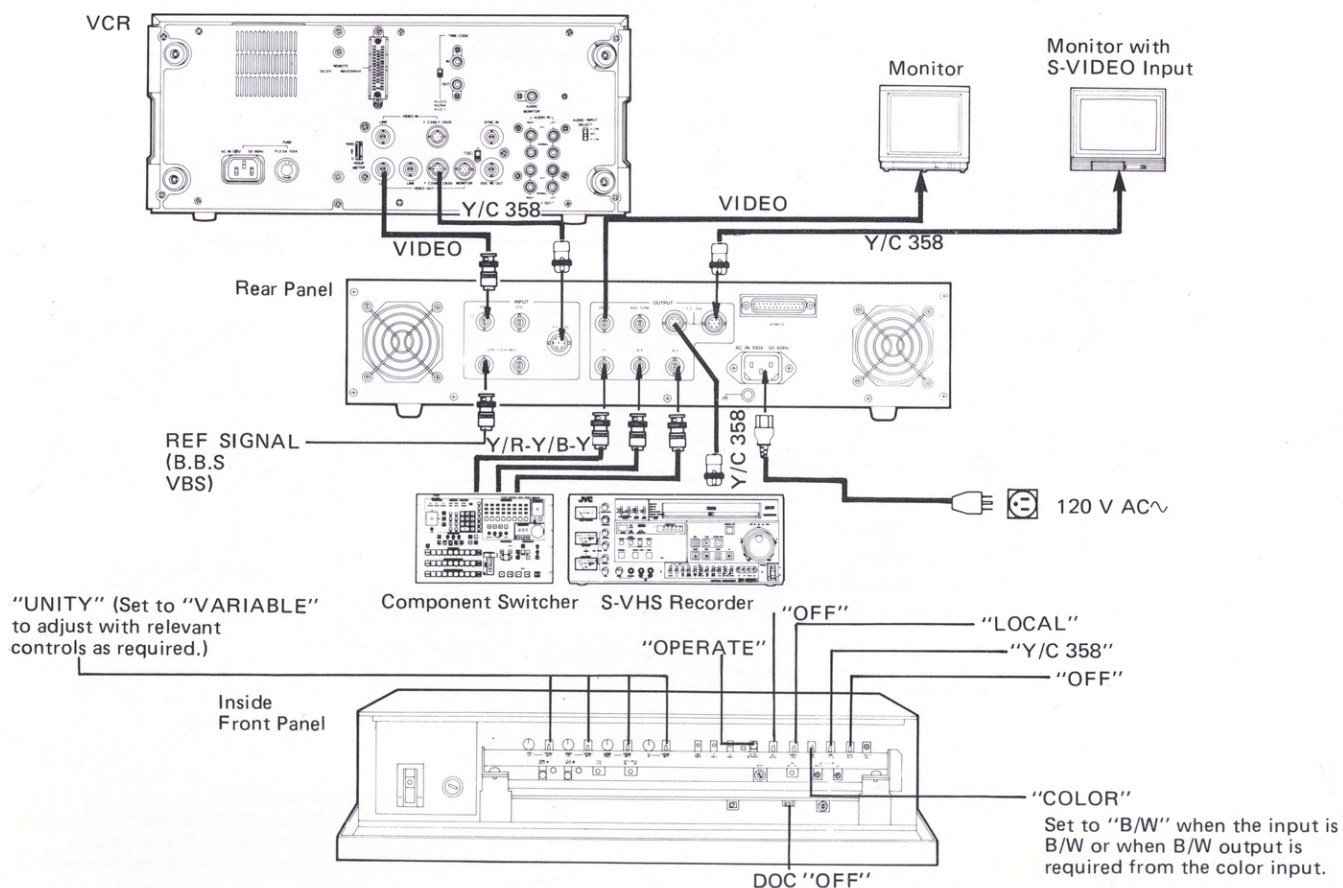
### 13 Ground terminal

# CONNECTIONS

1. Connecting to a VCR not equipped with EXT SYNC input, Y/C 358 output and RF (DOC) output.

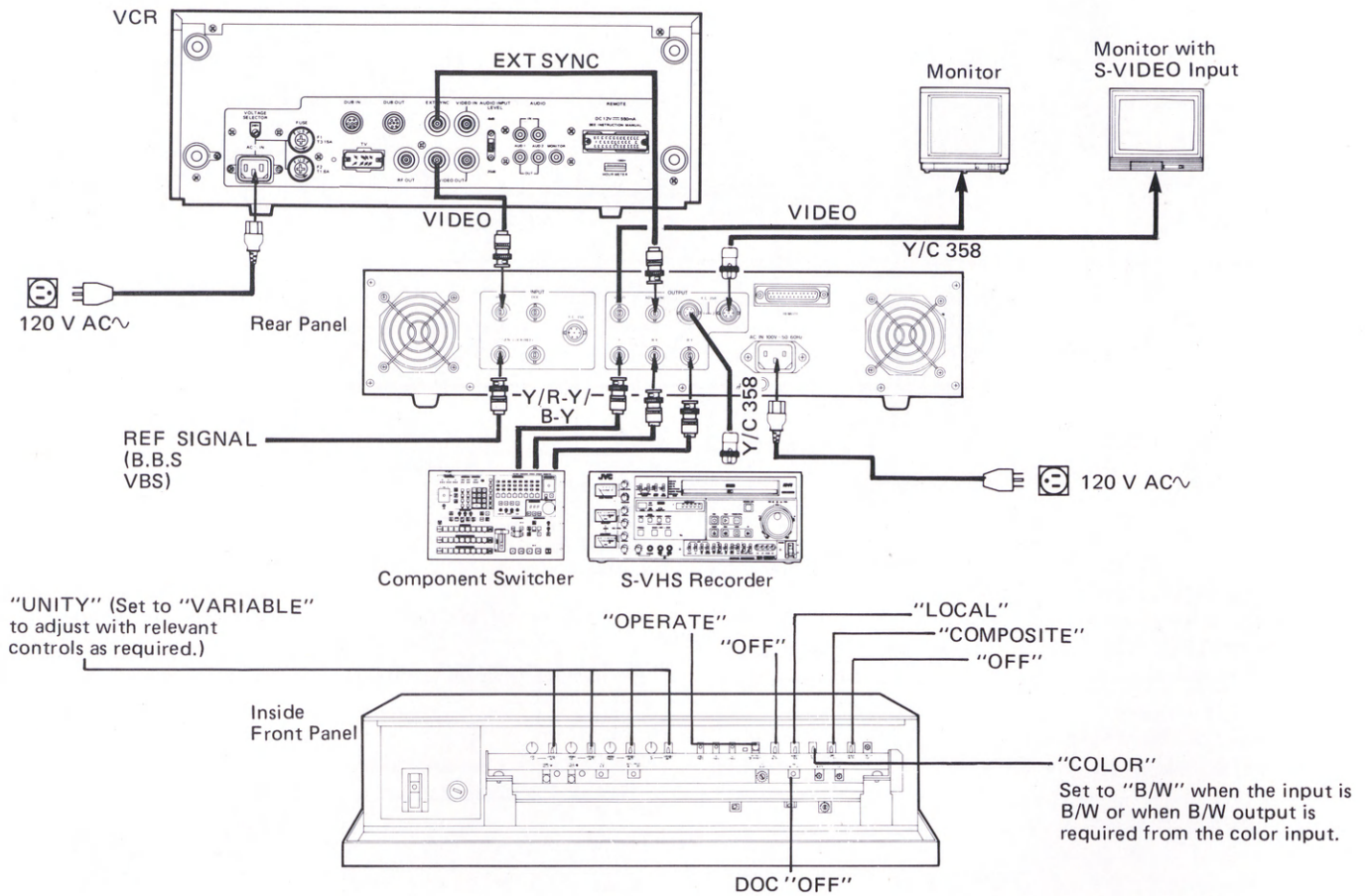


2. Connecting to a VCR not equipped with EXT SYNC input and RF (DOC) output, but equipped with Y/C 358 output.

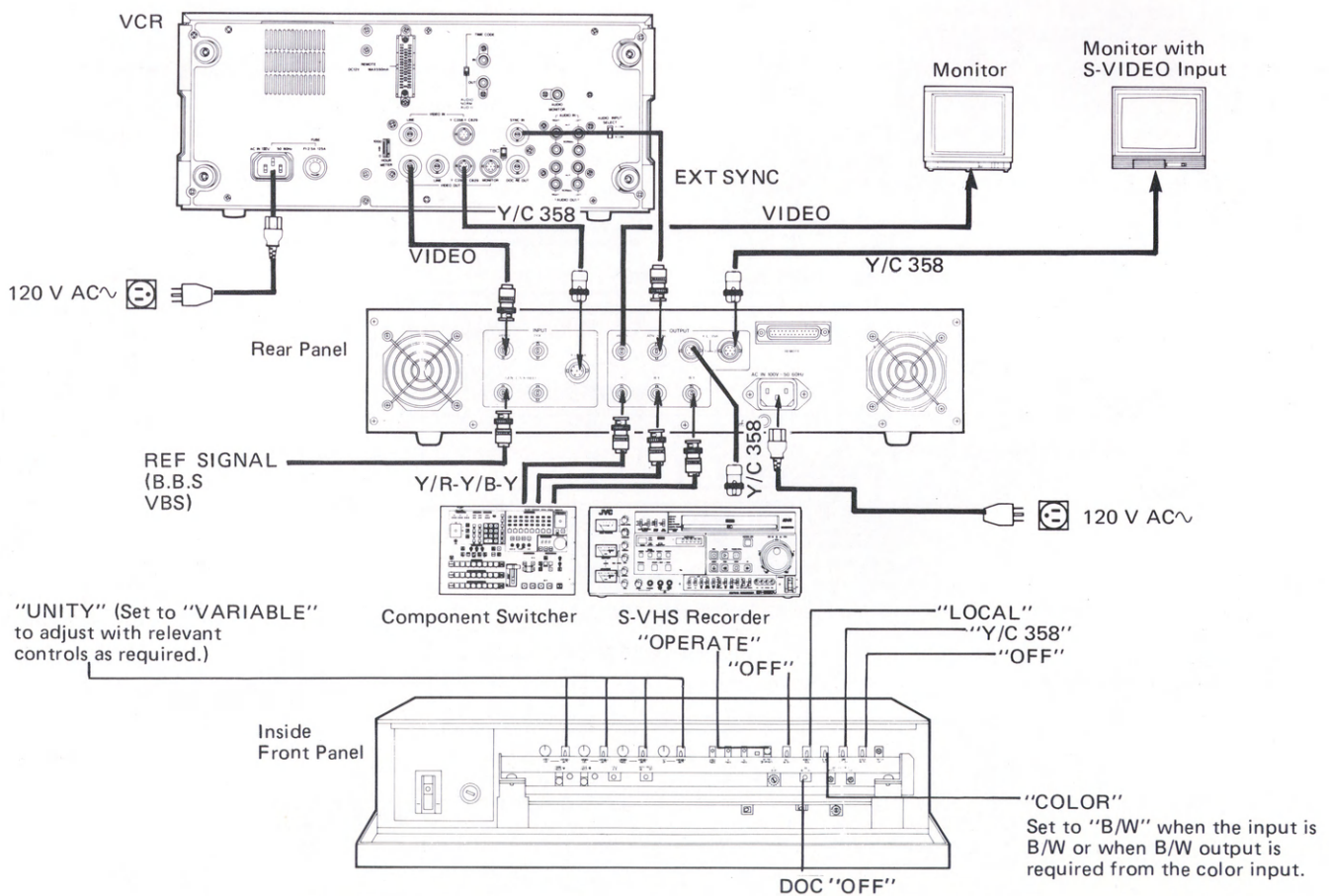




3. Connecting to a VCR equipped with EXT SYNC input, but not with Y/C 358 output and RF (DOC) output.

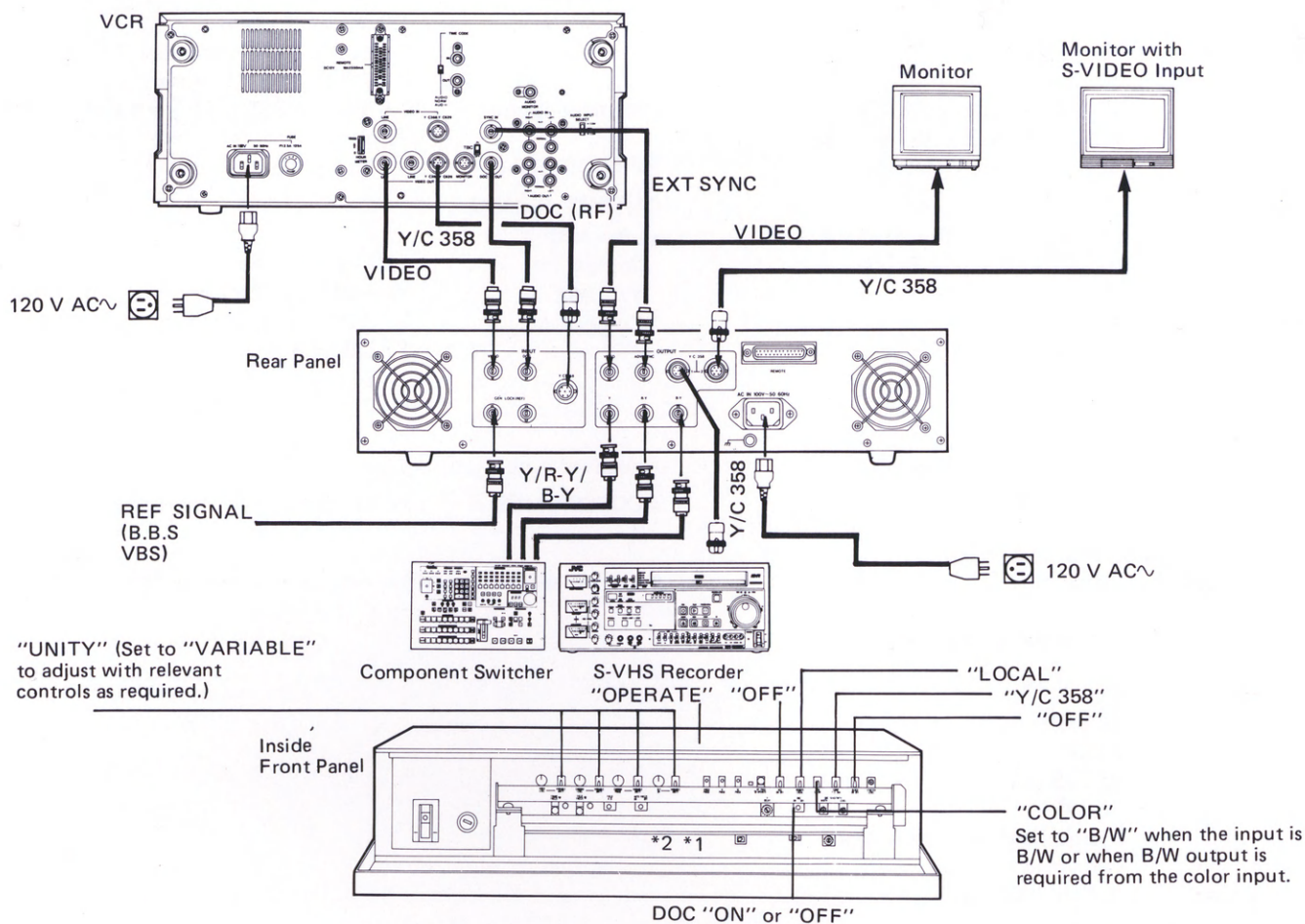


4. Connecting to a VCR equipped with EXT SYNC input and Y/C 358 input, but not with RF (DOC) output.





5. Connecting to a VCR equipped with EXT SYNC input, DOC (RF) output and Y/C 358 input and output.



\*1. Since the chroma phase varies depending on the VCR and the length of cable used, adjust the SC control with the CHROMA PHASE switch set to "UNITY".

\*2. Since the horizontal phase varies depending on the system and the length of cable used, adjust the H PHASE control.

## NOISE REDUCER

The Noise Reducer can be switched ON or OFF using NR ON/OFF switch (1) inside the front panel.

The Y-NR has three positions;

- 0: OFF
- 1: High-frequency NR for edge noise reduction
- 2: High-frequency NR + Low-frequency NR for reduction of edge noise and plane area noise

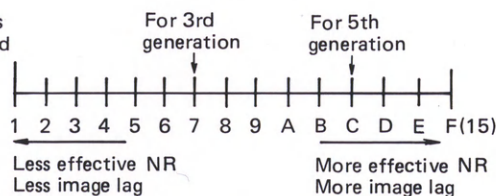
Mode 2 provides more effective noise reduction than Mode 1; however, Mode 2 reduces resolution somewhat; so Mode 1 is preferable.

The C-NR has 16 positions;

- 0: OFF
- 1, 2, 3, 4, 5, 6, 7, 8, 9, A(10), B(11), C(12), D(13), E(14) and F(15).

With positions 1 to F, the limiter width is varied in order to provide the most suitable effect. Usually, use position 7.

Relation between the C-NR positions noise reduction and image lag



Since noise reduction is done using field difference in principle it results in image lag. For this reason, with a picture with plenty of motion, use positions 1 to 5, with which image lag is virtually unnoticeable (but the NR effect will be less). In the case of a picture having less motion or a still picture, use positions with greater noise reduction (but image lag will be greater as well).



# SPECIFICATIONS

## GENERAL

AC power requirement: AC 120 V, 50/60 Hz  
Power consumption : 95 W  
Operating temperature: +5 to 40°C  
Operating humidity : 10 to 90 %  
Dimensions : 430(W) x 86(H) x 515(D) mm  
(16-15/16" x 3-7/16" x 20-5/16")  
Weight : Approx. 13 kg (19.9 lbs)

## VIDEO

Signal process : Component (Y, R-Y, B-Y = 4:1:1)  
Time-base correction : Infinite (1 frame/2 fields)  
range  
Sampling frequency : Y: 13.5 MHz  
C: 3.3 MHz (4:1:1 format)  
Sampling rate : Y: 8-bit  
C: 8-bit  
Frequency response : Y: 5 MHz -3 dB  
(Y/C 358, NR-OFF)  
C: 3.58 MHz  $\pm$ 0.5 MHz -3 dB  
Signal-to-noise ratio : 56 dB p-p/rms with quanting effects  
(SC trap; on with Shibasoku noise meter)  
DG (APL 10% to 90%): 2 %  
DP (APL 10% to 90%): 2°  
K factor (2T) : 2 % (Heterodyne mode)  
H tilt : 1 %  
V tilt : 1 %  
White clip : 110 IRE  
Black clip : 0 IRE  
Jitter : Y:  $\pm$ 15 nsec  
C:  $\pm$ 2°  
Freeze : Frame/field (A/B) selectable  
Auto freeze : Bad video sensor (on/off)  
Vertical blanking : On/off selectable

## INPUT SIGNAL

Video input  
Composite : 1.0 Vp-p, 75 ohms  
Y/C 358 : Y: 1.0 Vp-p, 75 ohms  
C: 0.286 Vp-p, 75 ohms  
Reference input : 1.0 Vp-p (VBS), 0.45 Vp-p (BB)  
75 ohms  
RF (DOC) input : 0.2 to 1.0 Vp-p, 75 ohms

## OUTPUT SIGNAL

Video output  
Composite : 1.0 Vp-p, 75 ohms  
Y/C 358 : Y: 1.0 Vp-p, 75 ohms  
C: 0.286 Vp-p, 75 ohms  
Component : Y: 1.0 Vp-p, 75 ohms  
R-Y/B-Y: 0.486 Vp-p, 75 ohms } (EIA color bar)  
Advanced sync output : 4.0 Vp-p, 75 ohms

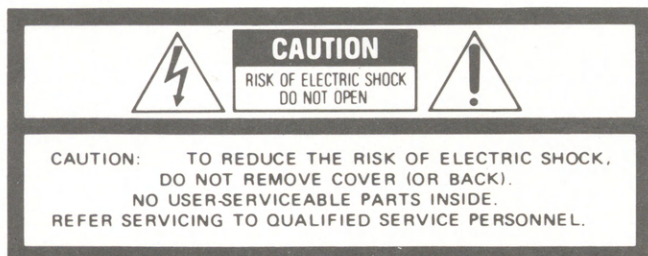
**ACCESSORIES** : Power cord, Rack mount kit

*Design and specifications subject to change without notice.*





## Instructions



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**NOTE:**

The rating plate (serial number plate) is on the rear or bottom of the unit.

## Manuel d'instructions



Le symbole de l'éclair à l'intérieur d'un triangle équilatéral est destiné à alerter l'utilisateur sur la présence d'une "tension dangereuse" non isolée dans le boîtier du produit. Cette tension est suffisante pour provoquer l'électrocution de personnes.



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\* Ces symboles ne sont utilisés qu'aux Etats-Unis.

**AVERTISSEMENT:**  
**POUR EVITER LES RISQUES D'INCENDIE OU D'ELECTROCUTION, NE PAS EXPOSER L'APPAREIL A L'HUMIDITE OU A LA PLUIE.**

Ce magnétoscope ne doit être utilisé que sur du courant alternatif en 120 V, 60 Hz ou 50 Hz.

**ATTENTION:**

Afin d'éviter tout risque d'incendie ou d'électrocution, ne pas utiliser d'autres sources d'alimentation électrique.

**REMARQUE:**

La plaque d'identification (numéro de série) se trouve sur le panneau arrière ou le fond de l'appareil.



**INFORMATION (FOR CANADA)**  
**RENSEIGNEMENT (POUR CANADA)**

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the radio interference regulations of the Canadian Department of Communications.

L'interférence radioélectrique générée par cet appareil numérique de Type B ne dépasse pas les limites énoncées dans le règlement sur les perturbations radioélectriques, section appareil numérique, du Ministère des Communications.





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